

Arista's Etherlink™ Smart Networking Portfolio



Highlights

Arista Smart Etherlink features

- AI Analyzer powered by AVA
- Advanced RDMA load balancing and congestion management
- AI NIC and workflow integration

Energy Efficient 5nm Technology

- Highest Density and Lowest power per Gbps
- Supports low power Linear-drive Pluggable Optics and extended DAC cables

Comprehensive AI Focused Portfolio

- Fixed, Modular and Distributed System choices
- Scalability from 64 to 32,000 x 800G ports
- Flexible 1- 2- or 3- tier leaf-spine and planar topologies
- UEC Ready

Generative artificial intelligence represents one of the most exciting technology inflections in the last decade - its rapid evolution and broadening adoption is driving changes that promise to touch every aspect of our lives.

AI workloads present a novel challenge for infrastructure designers as they are both compute and data intensive; an AI workload typically involves a large sparse matrix computation split across many thousands of steps run in parallel over hundreds or thousands of processors to reduce computation time.

Workloads are made up of many thousands of individual iterations and run for days or weeks, slowdown due to suboptimal communications critically impacts application performance, underutilizing valuable accelerators, idling away processor performance by 30% or more.

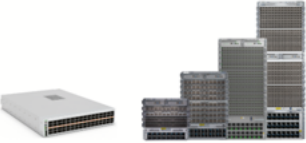
The overriding goal of an AI optimized network is to provide an extremely reliable, uncontended pathway between AI accelerators, avoiding any packet loss, congestion, preventing straggler flows, and ensuring all operations complete on time maximizing the utilization of the accelerators and minimizing time to job completion.

Arista Networks, the pioneer and thought leader in high performance, cloud scale networking solutions for mission critical applications is uniquely positioned to support current and future AI initiatives with an unmatched portfolio of Etherlink AI systems for 100, 200, 400 and 800G enriched with smart AI focused features scaling from the smallest single tier to the largest multi-tier AI back-end network.

Arista's unique market-leading portfolio provides the broadest choice of ultra-high performance, open and standards-based Ethernet switches. Arista caters to the spectrum, from easy-to-deploy 1-box solutions that scale from tens to hundreds of latest generation accelerators, all the way up to efficient 2-tier networks for over a hundred thousand hosts.

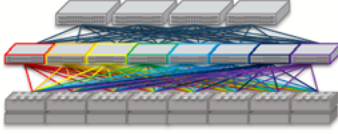
Arista Etherlink AI Portfolio

Single Switch



Fixed & Modular Systems
 51.2T → 460.8T
 64-576 x 800G Nodes
 128-1152 x 400G Nodes
 Lowest Cost, Power & Complexity

Leaf-Spine



2- or 3-Tier Leaf-Spine or Plane-based
 Multi-Petabit Bisectonal B/W
 DLB, PFC, ECN,
 Tens of Thousands of Nodes

Distributed Etherlink Switch



Single Hop Interconnect
 Fully Scheduled Lossless
 100% Efficient, Cell Spraying
 Multi-Petabit Bisectonal B/W
 Tens of Thousands of Nodes

Accelerator & NIC Agnostic, Open Standards, Smart AI Features

Three new product sets come together to offer an unparalleled choice of form factor, consumption and deployment model designed with forward compatibility for future Ultra Ethernet (UEC) networks. All systems are based on advanced 5 nm technology and support Linear-drive Passive Optics (LPO) and Extended Reach DAC Cables to minimize the power and cost burden of very high density, high bandwidth connectivity.

The 7060X6 family of fixed form factor switches offer 51.2 Tbps in a low latency, power efficient and compact 2RU format with support for 64 ports of either 800G OSFP or QSFP-DD. This high density platform enables connection of up to 64 x 800G or 128 x 400G accelerators (8-16 typical AI nodes) in a single compact system or combined with other devices in 2- or 3- tiers to create very large clusters.



The R4-AI generation of Arista's flagship 7800 series of modular systems implement an AI optimized packet pipeline in addition to the field-proven fully-scheduled, 100% fair internal architecture, and delivers support for up to 460 Tbps of 800G AI focused connectivity. Offering up to 576 ports of 800G, or 1152 ports of 400G, the 7800R4-AI is the most efficient and performant single-box solution for clusters up to 144 nodes and the ideal spine system for large 2- or 3- tier topologies.



Finally, the leading edge Distributed Etherlink Switch (DES) is the first in a new series of ultra-scalable, smart distributed systems that build on the the unique scalability and lossless forwarding of the 7800R4-AI to the peta-scale levels demanded by pre-eminent generative AI clusters. Tens of thousands of ports and tens of peta-bits of bisectonal bandwidth is made possible by a fully hardware accelerated architecture with massively parallel distributed scheduling and

congestion free traffic spraying fabric providing the ultimate foundation for large scale generative AI training.

Smart features driven by EOS

Complementing robust hardware performance are the rich features of Arista's Extensible Operating System (EOS™) and CloudVision platform. Building on industry leading security and reliability, and the rich portfolio of segmentation, visibility, telemetry and automation features, EOS brings new smart functionality tailored specifically to AI workloads.

EOS's AI Etherlink suite of capabilities includes advanced RDMA aware load balancing and QoS, congestion management and telemetry together with AI workflow and NIC integration, to automate configuration and improve visibility, and intelligent performance analysis powered by AVA. These unique smart features enable faster deployment, better performance analysis and eliminate the need to deploy expensive DPU hardware in every accelerator node.

Summary

The latest generation of Arista's market-leading 7000 series platforms are perfect partners for AI workloads, providing a well understood, easy-to-manage foundation for any type of AI accelerator with the inherent flexibility to support innovation as new paradigms and optimizations emerge.

The unparalleled quality of EOS™ and the power of automation and visibility provided by CloudVision have made Arista a leader in the high-performance network and data center market, with the broadest range of solutions for enterprises, service providers and cloud providers. Arista is committed to helping our customers deliver on the promise of AI.

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